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EPA Superfund
Record of Decision:

ELLSWORTH AIR FORCE BASE
EPA ID: SD2571924644
OU 10
ELLSWORTH AFB, SD
05/10/1996

Final

Record of Decision for Remedial Action at Operable Unit 10 Ellsworth Air Force Base, South Dakota

United States Air Force
Air Combat Command
Ellsworth Air Force Base

April 1996

Air Force Project No. FXBM 94-7002

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1.0 DECLARATION FOR THE RECORD OF DECISION

1.1 SITE NAME AND LOCATION

Operable Unit 10 (OU-10), North Hangar Complex, Ellsworth Air Force Base (EAFB), National Priorities List Site.

Meade and Pennington Counties, South Dakota

1.2 STATEMENT OF BASIS AND PURPOSE

This decision document describes EAFB's selected remedial action for Operable Unit 10 (OU-10), in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based on the contents of the Administrative Record for OU-10, EAFB. The United States Environmental Protection Agency (EPA) and the South Dakota Department of Environment and Natural Resources (SDDENR) concur with the selected remedial action.

1.3 DESCRIPTION OF SELECTED REMEDY

The selected alternative for OU-10 is No Action. Media affected solely by petroleum hydrocarbon contamination will be addressed through State of South Dakota programs for Underground Storage Tank removal and/or petroleum contaminated soils. Ground-water cleanup will be addressed as part of the Basewide ground-water operable unit, OU-11.

1.4 DECLARATION STATEMENT

Based on the findings of no unacceptable risk to human health and the environment, remediation is not warranted for OU-10. Remediation of soils and/or ground water contaminated by petroleum will be performed under the State of South Dakota regulations.

1.5 SIGNATURE AND AGENCY CONCURRENCE ON THE REMEDY

<IMG SRC 0896116>

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2.0 DECISION SUMMARY

2.1 SITE NAME AND LOCATION

EAFB is a U.S. Air Force Air Combat Command (ACC) installation located 12 miles east of Rapid City, South Dakota, and adjacent to the small community of Box Elder (Figure 2-1).

EAFB covers approximately 4,858 acres within Meade and Pennington counties and includes runways and airfield operations, industrial areas, and housing and recreational facilities (Figure 2-2). Open land, containing a few private residences, lies adjacent to EAFB on the north, south, and west, while residential and commercial areas lie to the east of the Base.

2.2 OPERABLE UNIT 10 (OU-10) DESCRIPTION/HISTORY AND REGULATORY OVERSIGHT ACTIVITIES

2.2.1 Description/History

Ellsworth Air Force Base (EAFB) was officially activated in July 1942 as the Rapid City Army Air Base, a training facility for B-17 bomber crews. It became a permanent facility in 1948 with the 28th Strategic Reconnaissance Wing as its host unit. Historically, EAFB has been the headquarters of operations for a variety of aircraft, as well as the Titan I Intercontinental Ballistic Missile, and the Minuteman I and Minuteman II missile systems. The Air Force has provided support, training, maintenance, and/or testing facilities. Presently, the 28th Bombardment Wing (B-1B bombers) is the host unit of EAFB.

OU-10 is the North Hangar Complex, a 75-acre site located in the central portion of the Base, northeast of the primary instrument runway (Figure 2-3). The North Hangar Complex was constructed in the 1950s and is composed of five rows of aircraft repair and maintenance hangars. Most of OU-10 is paved with concrete with some grassy areas between the hanger rows. No surface water is present at OU-10. The area contains a system of underground jet-fuel hydrant lines that deliver fuel to docking aircraft. The primary source of contamination at OU-10 is the fuel distribution system. Additional contaminant source areas include the aircraft maintenance areas and underground industrial waste lines. It was reported that waste products used for aircraft maintenance may have been washed down floor drains in the maintenance buildings. The remedial investigation focused on determining if these waste products were then discharged into the soil beneath the maintenance area and to determine if contaminants had leaked from the underground industrial waste lines.

Soil contamination addressed under this investigation, found near the fuel distribution system were below concentrations posing a risk to human health or the environment.

A shallow aquifer has been identified at depths of 10 feet to 50 beneath the ground surface. This ground water is classified as having a beneficial use as a drinking water supply suitable for human consumption(ARSD Chapter 74:03:15, Groundwater Quality Standards). The Shallow aquifer may also discharge to the surface. Deeper bedrock aquifers also exist beneath EAFB. These deeper aquifers are separated from the shallow aquifer by 800 feet of low-permeability clays and slits. In the past, EAFB utilized these deeper aquifers for its water supply. Presently, EAFB obtains its potable water from the Rapid City Municipal Distribution System.

2.2.2 Regulatory Oversight Activities

Environmental investigation activities at EAFB were initiated by the Air Force in 1985 through an Installation Restoration Program (IRP) Phase I Installation Assessment/Records Search and Phase II, Confirmation/Quantification. The Phase I study, dated September, 1985, identified a total of 17 locations at EAFB where releases involving hazardous substances potentially occurred.

In Phase II of the IRP investigation, field activities included soil vapor surveys, geophysical surveys, surface and subsurface soil sampling, ground-water sampling, ground-water hydrologic testing, and ecological investigations.

On August 30, 1990 (55 Federal Register 35509), EAFB was listed on the U.S. EPA's National Priorities List (NPL). A Federal Facilities Agreement (FFA) was signed in January 1992 by the Air Force, EPA, and the State of South Dakota (State) and went into effect on April 1, 1992. The FFA establishes a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions for EAFB in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). It also states the oversight procedures for EPA and the State to ensure Air Force compliance with the specific requirements. The FFA identified 11 site-specific operable units (OUs) and a Base-wide ground-water OU. The Base-wide

ground-water OU is primarily used to address contaminated ground water that was not addressed during the investigation of a site-specific OU.

Listing on the NPL and execution of the FFA required the U.S. Air Force to perform a remedial investigation/feasibility study (RI/FS) to investigate the 12 OUs. In 1993 and 1994, and extensive RI field program was conducted to characterize conditions at OU-10. The program included drilling and sampling of boreholes, installation of ground-water monitoring wells, ground-water sampling, geotechnical analysis of soil samples, ecological evaluation, assessment of human health risks, and review and compilation of previous IRP investigations. Collection and laboratory analysis of soil and ground-water samples were included in the RI field program.

2.3 HIGHLIGHTS OF COMMUNITY PARTICIPATION

Community relations activities that have taken place at EAFB to date include:

- FFA process. After preparation of the FFA by the USAF, EPA, and SDDENR, the document was published for comment. The FFA became effective April 1, 1992.
- Administrative Record. An Administrative Record for information was established in Building 8203 at EAFB. The Administrative Record contains information used to support USAF decision-making. All the documents in the Administrative Record are available to the public.
- Information repositories. An Administrative Record outline is located at the Rapid City Library (public repository).
- Community Relations Plan (CRP). The CRP was prepared and has been accepted by EPA and the State of South Dakota and is currently being carried out. An update to this plan will be prepared in 1996.
- Restoration Advisory Board (RAB). The RAB has been formed to facilitate public input in the cleanup and meets quarterly. In addition to USAF, EPA, and South Dakota oversight personnel, the RAB includes community leaders and local representatives from the surrounding area.
- Mailing list. A mailing list of all interested parties in the community is maintained by EAFB and updated regularly.
- Fact Sheet. A fact sheet describing the status of the IRP at EAFB was distributed to the mailing list addressees in 1992.
- Open house. An informational meeting on the status of the IRP and other environmental efforts at EAFB was held on May 6, 1993. An open house was held November 16, 1995 in conjunction with the Restoration Advisory Board meeting. Information on the status of environmental efforts at EAFB was provided.
- Newspaper articles. Articles have been written for the base newspaper regarding IRP activity.
- Proposed Plan. The proposed plan on this action was distributed to the mailing list addressees for their comments.

A public comment period was held from December 28, 1995 to January 27, 1996, and a public meeting was held on January 11, 1996. At this meeting, representatives from EAFB answered questions about the remedial action. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision (ROD).

This ROD is based on the contents of the Administrative Record for OU-10, in accordance with the CERCLA, as amended by SARA, and the NCP. The RI/FS reports and the Proposed Plan for OU-10 provide information about OU-10 and the selected remedy. These documents are available at the Information Repositories at EAFB and the Rapid City Public Library.

2.4 SCOPE AND ROLE OF RESPONSE ACTION

The FFA identified 11 potential source area operable units (OUs) as well as a Base-wide ground-water operable unit. The 12 operable units are identified as follows:

OU-1 Fire Protection Training Area
OU-2 Landfills Nos. 1 and 6
OU-3 Landfills No. 2
OU-4 Landfills No. 3
OU-5 Landfills No. 4
OU-6 Landfills No. 5
OU-7 Weapons Storage Area
OU-8 Explosive Ordnance Disposal Area (Pramitol Spill)
OU-9 Old Auto Hobby Shop Area
OU-10 North Hangar Complex
OU-11 Base-wide Ground Water
OU-12 Hardfill No. 1

This ROD is to document the selected remedy for the preferred remedial action (RA) at OU-10. The ground water at OU-10 will be addressed as part of OU-11, the Base-wide ground-water OU. Ground-water contamination extends beyond the boundaries of OU-10 and would be more efficiently handled in a remediation scheme concurrently addressing the contamination of OU-11.

The "No Action" alternative is being proposed for the remaining media of concern, soil. No action is warranted when a site poses no unacceptable current or future threat to people or the environment, when CERCLA does not provide cleanup authority, or when a previous cleanup activity eliminates the need for future cleanup. The low levels of contamination in the soil at OU-10, which are discussed in the following section entitled Summary of Site Risks, do not pose an unacceptable current or future threat to people or the environment. Cleanup of petroleum-type chemicals will be addressed by State of South Dakota Petroleum-Contaminated Soils regulations. Given the above conditions, no action is warranted for soil cleanup at OU-10 under CERCLA.

2.5 SITE CHARACTERISTICS

This section describes the presence and distribution of contaminants in environment media retained as part of OU-10.

2.5.1 Soils

Organic Compounds

Organics reported in soil samples from OU-10 includes volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and jet fuel. The predominant VOCs were benzene, toluene, ethylbenzene, xylene (BTEX) associated with fuels. Maximum concentrations ranged from greater than 5,000 µg/kg near Row 90 to greater than 15,000 µg/kg near Row 60. Fifteen SVOCs were also reported in OU-10 samples. The majority of the reported SVOCs occurred in samples near Rows 60 and 80. Jet fuel was reported in 16 of the 25 soil boring samples collected from OU-10. Jet fuel was reported at a maximum concentration of 8,100,000 µg/kg.

Inorganic Contaminants

Fifteen inorganics were reported in soil samples from OU-10. These reported inorganics are considered to be naturally occurring.

2.6 SITE RISK SUMMARY

Human Health Risks

The assessment of human health risks for this OU considered the following topics:

(1) Chemicals of concern (COCs) in ground-water and soil samples taken at OU-10;

(2) Current and future land-use conditions;

(3) Potential environmental pathways by which populations might be exposed;

(4) Estimated exposure point concentrations of COCs;

(5) Estimated intake levels of the COCs;

(6) Toxicity of the COCs; and

(7) Uncertainties in the assessments of exposure, toxicity, and general risks.

Noncarcinogenic and carcinogenic risks were calculated for the following five potential exposure groups:

(1) Current EAFB maintenance personnel mowing grass on-site;

(2) The future child/adult living on-site who ingests surface soil;

(3) The future adult living on-site who ingests and showers with shallow ground water;

(4) Future adolescents who are exposed to surface water and sediment through wading; and,

(5) Future adult construction workers who excavate on-site for building residences.

A quantitative risk assessment was performed for the ground water, surface water, soil, sediment, and air. The risk assessment evaluated potential effects on human health posed by exposure to contaminants within OU-10. Carcinogenic risks were estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a potential cancer-causing chemical. The acceptable risk range expressed as a probability is one cancer incident in ten thousand people to one cancer incident in a million people. This level of risk is also denoted by 1 x 10-4 to 1 x 10-6. Risks within the acceptable risk range may or may not warrant remedial action depending upon site-specific circumstances. Risks below this range cannot be differentiated from the background occurrence of cancer in human populations. Risks calculated in a risk assessment are potential risks and are excess (i.e., over background) cancer risks due to exposure from contaminants at the OU.

The risk assessment for OU-10 indicated that the risk for the future industrial land-use, which is similar to its current use, is within the acceptable risk range. For noncarcinogenic risk, the HI was 0.006, which is acceptable. For carcinogenic risk, the calculated risk value was 2 x 10-6, which indicates the risk is within the acceptable risk range. Potential risks posed by exposure to shallow ground water are being addressed as part of OU-11 and are not being addressed as part of OU-10. Because of these conclusions, remediation is not warranted under CERCLA for soil at OU-10.

Ecological Risks

An ecological risk evaluation of OU-10 was based on a combination of data and literature reviews, field and laboratory analyses, analyte evaluation and screening, and preliminary risk screening. The pertinent findings are summarized below.

Various types of invertebrates, amphibians, birds, and mammals may live, forage, or nest in OU-10 habitats. These species, along with terrestrial vegetation and soil faunal communities, do not reveal characteristics that indicate chemical-related impacts. This finding is consistent with the relatively low levels of contaminants in the soil.

Because of the altered natural environment at OU-10, rare, threatened, or endangered species are unlikely to utilize the area for more than brief, periodic habitat. Due to the low levels of contaminant concentrations, the contaminants do not pose an unacceptable risk to these species. In addition, the limited contact these species would have with the OU-10 area ensures unacceptable risk to a single individual will not occur.

Findings of the RI indicate that the contaminants at OU-10 are not altering the ecology to noticeable levels. A Base-wide ecological risk assessment will be conducted as part of OU-11, and OU-10 will be included in this Base-wide evaluation (ARSD Article 74:03).

2.7 STATUTORY DETERMINATIONS

Based on the findings of the remedial investigation and the risk assessment, remedial action for OU-10 is not warranted at this time. Remediation of soils and/or ground water contaminated by petroleum will be performed under State of South Dakota regulations.

2.8 DOCUMENTATION OF SIGNIFICANT CHANGES

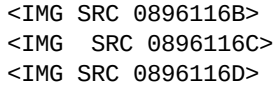
The selected action is the same as the preferred alternative presented in the Proposed Plan for OU-10 remedial action. There have been no changes relative to the Proposed Plan.

3.0 LIST OF ACRONYMS AND ABBREVIATIONS

ACC:	Air Combat Command
ARARs:	Applicable or Relevant and Appropriate Requirements
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
CFR:	Code of Federal Regulations
COC:	Chemicals of Concern
CRP:	Community Relations Plan
EAFB:	Ellsworth Air Force Base
EPA:	Environmental Protection Agency
FFA:	Federal Facilities Agreement
FS:	Feasibility Study
IRP:	Installation Restoration Program
µg/kg:	Micrograms per Kilogram
NCP:	National Oil and Hazardous Substances Contingency Plan
NPL:	National Priorities List
OSHA:	Occupational Safety and Health Administration
OU:	Operable Unit
RA:	Remedial Action
RAB:	Restoration Advisory Board
RI/FS:	Remedial Investigation/Feasibility Study
ROD:	Record of Decision
SARA:	Superfund Amendments and Reauthorization Act
SDDENR:	South Dakota Department of Environment and Natural Resources
SVOC:	Semivolatile Organic Compound
USAF:	United States Air Force
VOC:	Volatile Organic Compound

APPENDIX A

FIGURES



APPENDIX B

Responsiveness Summary
Remedial Action at Operable Unit Ten
Ellsworth Air Force Base, South Dakota

1. Overview

The United States Air Force (USAF) established a public comment period from December 28, 1995 to January 27, 1996 for interested parties to review and comment on remedial alternatives considered and described in the Proposed Plan for Operable Unit 10 (OU-10). The Proposed Plan was prepared by the USAF in cooperation with the U.S. Environmental and Natural Resource (SDDENR).

The USAF also held a public meeting at 7:30 p.m. on January 11, 1996 in the 28th Bomb Wing Auditorium at Ellsworth Air Force Base (EAFB) to outline the proposed remedy to reduce risk and control potential hazards at the Operable Unit (OU).

The Responsiveness Summary provides a summary of comments and questions received from the community at the public meeting during the public comment period as well as the USAF's responses to public comments.

The Responsiveness Summary is organized into the following sections:

- Background on Community Involvement
- Summary of Comments and Questions Received During the Public Comment Period and USAF Responses
- Remaining Concerns

The ground water at OU-10 will be addressed as part of OU-11, the Base-wide ground-water OU Ground-water contamination extends beyond the boundaries of OU-10 and would be more efficiently handled in a remediation scheme concurrently addressing the contamination of OU-11.

The "No Action" alternative is being proposed for the remaining media of concern, soil. No action is warranted when a site poses no unacceptable current or future threat to people or the environment, when CERCLA does not provide cleanup authority, or when previous cleanup activity eliminates the need for future cleanup. The low levels of contamination in the soil at OU-10 do not pose an unacceptable current or future threat to people or the environment. Cleanup of petroleum-type chemicals will be addressed by State of South Dakota Petroleum-Contaminated Soils regulations. Given the above conditions no action is warranted for soil cleanup at OU-10 under CERCLA.

2. Background on Community Involvement

On August 30, 1990 EAFB was listed on the USEPA's National Priorities List (NPL). A Federal Facilities Agreement (FFA) was signed in January 1992 by the Air Force, EPA, and the State and went into effect on April 1, 1992. The FFA establishes a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions for EAFB.

Community relations activities that have taken place at EAFB to date include:

- FFA process. After preparation of the FFA by the USAF, EPA, and SDDENR, the document was published for comment. The FFA became effective April, 1992.
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- Restoration Advisory Board (RAB). The RAB has been formed to facilitate public input in the cleanup and meets quarterly. In addition to USAF, EPA, and South Dakota oversight personnel, the RAB includes community leaders and local representatives from the surrounding area.

- Mailing list. A mailing list of all interested parties in the community is maintained by EAFB and updated regularly.

- Fact sheet. A fact sheet describing the status of the IRP at EAFB was distributed to the mailing list addressees in 1992.

- Open house. An informational meeting on the status of the IRP and other environmental efforts at EAFB held on May 6, 1993. An open house was held November 16, 1995 in conjunction with the Restoration Advisory Board meeting. Information on the status of environment efforts at EAFB was provided.

- Newspaper articles. Articles have been written for the base newspaper regarding IRP activity.

- Proposed Plan. The Proposed Plan for this remedial action was distributed to the mailing list addressees for their comments.

Additional copies of the Proposed Plan were available at the January 11, 1996 public meeting. A transcript of comments, questions and responses provided during the public meeting was prepared.

3. Summary of Comments and Questions Received During the Public Comment Period and USAF Responses

Part I-Summary and Response to Local Community Concerns

Review of the written transcript of the public meeting did not indicate community objections to the proposed remedial action. No written comments were received during the public comment period.

The two comments received during the public meeting were questions about funding of cleanup under State corrective action plans and the risk of contaminated soils beneath concrete slabs.

Representatives of the USAF were available to provide answers to the questions and also provided an overview presentation during the meeting to describe the proposed actions.

Part II-Comprehensive Response to Specific Technical, Legal and Miscellaneous Questions

The comments and question below are in the order they appear in the written transcript of the January 11, 1996 public meeting.

Comment 1.Janice Deming

Asked if the corrective action plans were part of the Base cleanup even if they aren't under Superfund and whether there was funding available for these corrective action plans.

Response: The corrective action plans are being pursued as aggressively and in parallel with the designated Superfund sites. State corrective action plans at EAFB are fully funded through the Installation Restoration Program. Addressing certain areas under state corrective action plans is generally more cost effective because cleanup can begin sooner. Also, the type of contaminants addressed under corrective action plans are generally easier to deal with.

Comment 2.Gary Stuard

Asked whether the contaminants (jet fuel) present in the soil beneath concrete slabs were above risk levels or were risk levels low because of the presence of the concrete above the contamination.

Response: When calculating health risk, both the contaminated media and the potential for exposure to the contaminated media are considered. Since the contaminated media are beneath two feet of concrete, the likelihood of human contact with these soils is low. Consequently, the calculated human health risk from these soils is low and action under CERCLA is not required. There are soils at OU-10 contaminated with jet fuel above state cleanup levels and these soils will be addressed through a corrective action plan.